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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,997	07/25/2003	Hsueh Sung Tung	H0005304	3726

7590 10/27/2008  
Colleen D. Szuch, Esq.  
Honeywell International Inc.  
101 Columbia Road  
Morristown, NJ 07962-2245

EXAMINER
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NWAONICHA, CHUKWUMA O

ART UNIT	PAPER NUMBER
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1621

MAIL DATE	DELIVERY MODE
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10/27/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/626,997	<b>Applicant(s)</b> TUNG ET AL.	
	<b>Examiner</b> CHUKWUMA O. NWAONICHA	<b>Art Unit</b> 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Current Status***

1. This action is responsive to Applicants' amendment of 27 August 2008.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Claims 1, 3, 5-36 are pending in the application.

The 103 rejection of claims 1, 3, 5-9, 11-17, 19, 20, 22-31 and 33-35 is maintained for the reasons given in the previous Office Action.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 5-36 are rejected under 35 U.S.C. 103(a) as being unpatented over Elsheikh et al. (1), (US patent 5,895,825) in view of Elsheikh et al. (2), (US patent 6,124,510).

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Applicants claim a process for the manufacture of 1,3,3,3-tetrafluoropropene comprising: a) reacting 1-chloro-3,3,3-trifluoropropene with hydrogen fluoride in a reactor in the vapor phase and in the presence of a fluorination catalyst and under conditions sufficient to form an intermediate product which comprises 1-chloro-1,3,3,3-tetrafluoropropane and 1,1,1,3,3-pentafluoropropane; and b) reacting said intermediate product with a caustic solution and under conditions sufficient to dehydrochlorinate 1-chloro-1,3,3,3-tetrafluoropropane and to dehydrofluorinate 1,1,1,3,3-pentafluoropropane, forming a reaction product which comprises 1,3,3,3-tetrafluoropropene; wherein all the variables are as defined in the claims.

**Determination of the scope and content of the prior art (M.P.E.P. §2141.01)**

Elsheikh et. al. (I), (US patent 5,895,825), teach a process of manufacturing 1,1,1,3,3-pentafluoropentane by reacting 1-chloro-3,3,3-trifluoropropene with hydrogen fluoride in a reactor under conditions sufficient to produce 1,1,1,3,3-pentafluoropropane (see column 1, lines 23-41 ).

**Ascertainment of the difference between the prior art and the claims (M.P.E.P.. §2141.02)**

Applicants claimed process for the manufacture of 1,3,3,3-tetrafluoropropene differs from the process taught by Elsheikh et al. (1) in that Applicants claim a process that produces 1,1,1,3,3-pentafluoropropane followed by second step that produces 1,3,3,3-tetrafluoropropene while Elsheikh et al. (1) teach a process that produced 1,1,1,3,3-pentafluoropropane.

However, the secondary reference of Elsheikh et al. (2) teach a process for preparing the cis and trans isomers of 1,3,3,3-pentafluoropropene from the intermediate of the instant claims by dehydrofluorination of 1,1,1,3,3-pentafluoropropane in a caustic solution.

**Finding of prima facie obviousness--rational and motivation (M.P.E.P. §2142-2143)**

The instantly claimed process for the manufacture of 1,3,3,3-tetrafluoropropene is obvious to one of ordinary skill in chemistry in view of the teachings of the prior art references of Elsheikh et al. (1) and Elsheikh et al. (2).

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the process conditions from the teachings of Elsheikh et al. (1) and Elsheikh et al. (2). to arrive at the instantly claimed process for the manufacture of 1,3,3,3-tetrafluoropropene by reacting 1-chloro-3,3,3-trifluoropropene with hydrogen fluoride in a reactor in the vapor phase and in the presence of a fluorination catalyst. Said person would have been motivated to practice the teaching of the references cited because they demonstrate that 1,3,3,3-tetrafluoropropene is useful in industrial applications.

Based on the above, Elsheikh et al. (1) and Elsheikh et al. (2). teach the elements of the claims in the instant application with sufficient guidance, particularity and reasonable expectation of success that the claims in the instant application would be prima facie obvious to one of ordinary skill ( Elsheikh et. al. (1) and (2) teach or suggest all the claim limitations with a reasonable expectation of success M.P.E.P 21434.).

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Moreover, all the claimed elements were known in the prior arts and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in art at the time of the invention.

**No claim is allowed.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chukwuma O. Nwaonicha/  
Examiner, Art Unit 1621

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/Karl J. Puttlitz/

Primary Examiner, Art Unit 1621